RCS COMMUNICATIONS
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4700VP Telephone Interconnect

Features

- Low Cost, Rugged Construction
- 25 Speed Dial Locations, Last Number Redial
- Extremely Compact (1.5 x 4 x 4 inches)
- User Programmable Identity Code
- Comprehensive Toll Restrict with Override Code
- Call Limit Timer
- Hook Flash
- Override Code
- Connect/Disconnect Switch
- Courtesy Beep
- Time Out Timer/Warning Beeps
- Simplex or Half Duplex
- Reverse Patch Ring
- True DTMF Regeneration
- Repeat Audio
- Busy Channel Inhibit
- CW-ID
- CTCSS Logic Input
- Remote Programming
- Lightning Protection
- Local Programming
- Simplex Enhanced Sampling
- Tone Dialing/Multi-Country Pulse Dialing
- Simplex VOX Control/VeraTec™ Smart Sampling
- Automatic Setup
- 1 Year Limited Warranty

INTRODUCTION

Within CES's broad line of telephone interconnects, the 4700VP stands out as CES's lowest cost, smallest (1.5 x 4 x 4 inches) and most versatile simplex and half-duplex patch.

The unit is designed to interface to a wide range of popular transceivers, and provides the user with a capability to make and take telephone calls over a radio system.

The 4700VP was developed and designed at CES. Some of the exceptional features include, DTMF regeneration, 25 speed dial locations, fully remote "over the air" programming with a DTMF radio or local programming via touch tone phone, simplex enhanced sampling, sinplex VOX control with Veratec™, CES proprietary smart sampling protocol, 10 digit connect/disconnect code, automatic setup, full feature toll restriction with inclusion and exclusion numbers, user programmable CW-ID, and built in repeat audio path.

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4700VP -FEATURES & PROGRAMMING

Speed Dial & Last Number Redial
The 4700 Versatile interconnect supports 25 speed dial locations together with last number redial.

Toll Restriction/Override Code
The 4700VP includes a full featured toll restriction with inclusion and exclusion number lists.

Connect/Disconnect Codes
Up to 10 digits can be programmed as a connect/disconnect code. The sequence of operation would be: * (Star) plus up to 10 digits to bring the 4700VP up, and # (Pound) plus up to 10 digits to disconnect. If desired, the 4700VP can also be programmed for * (Star) up, and # (Pound) down operation with no connect or disconnect codes required for operation.

Connect Disconnect Switch
Front panel switch for manual connect/disconnect capabilities.

Lightning Protection
For added protection, the model 4700VP comes with built-in lightning suppression.

Local or Remote Programming
The 4700VP may be programmed locally via any standard DTMF telephone keypad. When changes to programming need to be made while the interconnect is not attended, the 4700VP programming mode may be accessed remotely as well.

Simplex Enhanced Sampling Mode
CES has incorporated some revolutionary protocols in the 4700VP to provide the best possible combination of features allowing the user to select an operating platform that best meets their needs. Simplex Enhanced Sampling is one of these operating modes. The Sample Rate is the rate at which the interconnect unkeys the transmitter and listens for a mobile. (The Sample Rate is expressed in seconds). The normal Sample Rate is factory set at 2 samples per second. When audio is present from the phone line the unit switches automatically to Enhanced Sample Mode and the Sample Rate is decreased. The Enhanced Sample Rate is user programmable from 2 ~ 50 seconds (in ten steps). The Sample Window (user programmable) determines the length of time the transmitter unkey's allowing the receiver to listen for mobile activity. This timer is user programmable by entering 1 digit 0 ~ 9.

Simplex Vox with VeraTEC Smart Sampling
The 4700VP with VeraTeC, CES's proprietary smart sampling protocol mixes VOX and sampling modes. When audio is present on the telephone line, the 4700VP will operate in VOX mode until the maximum VOX timer (user programmable) ends. The maximum VOX timer controls how long the 4700VP will stay keyed continuously. The unit will then enter sampling mode allowing the mobile operator to take control of the unit. This feature is very useful if the interconnected call is put on hold, particularly music on hold. When the mobile gains audio control, Vox mode is disabled until mobile releases PTT. This means that the 4700VP will go in to sampling mode until carrier is detected from the mobile.

Half Duplex
In the half duplex mode, the 4700VP will assert PTT for the duration of the interconnected call. Therefore two different frequencies are needed for this application. The 4700VP will transmit and receive on two different frequencies at one time.

Automatic Set up
By entering a digit 0 ~ 9, the 4700VP will automatically setup the sampling window to the setting that you determined was the best setting for your transceiver.

Hook Flash
This 4700VP feature is used in conjunction with *call waiting* offered in some markets by the telephone company. This allows the mobile user to make or take another call without disconnecting the current call. The user can *flash* between calls by momentarily activating the * (Star) plus 2 digits.

Courtesy Beeps
The 4700VP provides a short audible courtesy beep to the telephone line each time the mobile user unkeys. This gives an audible indication to the telephone party that they may now begin to talk.

Call Limit Timer
This timer controls the maximum duration of interconnect calls. Time Out Warning Beeps are generated every 6 seconds for the last 30 seconds before the timer expires.

Mobile Activity Timer
If the 4700VP does not detect carrier, a mobile activity timer starts and will turn off the transmitter and hang up the telephone line when the pre-programmed timer expires. Beeps are sent every 6 seconds until cutoff. The timer will reset every time the unit detects-carrier from the mobile. The timer is user programmable in 9 steps or may be turned off.

CW-Identity
When enabled, a user programmable CW-ID is sent each time the interval timer (user programmable) has expired. It is only sent when the channel is not busy. If the channel is busy when the timer interval has expired, the CW-ID will be sent when the channel becomes free. Up to 12 digits may be programmed.

Reverse Patch
When the telephone line rings the 4700VP will transmit a ringing signal to a mobile. This is called *reverse* patch. Ringing will not be sent if the system is busy. This feature is user programmable on or off.

Repeat Audio
This allows receive audio to be repeated (transmitted) for mobile to mobile communications when the 4700VP is in the duplex mode.

Internal COR
The internal COR control is used for muting the audio (squelch noise), when no carrier exists on the radio channel. This condition is indicated by the COR LED on the front panel of the 4700VP

External Logic Input
The external logic input can be programmed for active high or active low and is connected to the COR/COS/CAS of the receiver. It can also be connected to an external CTCSS/DCS decoder which upon decode of the correct tone will cause the CTCSS/DCS output to change state.

Busy Channel Inhibit
Busy channel inhibit, when enabled, will first check for activity on the channel before ringing to the mobile and will not ring if the channel is busy.

Regenerate Mode
After the connect code is received, the unit will go into regenerate DTMF mode. The audio to the phone line will be disabled, and DTMF will be regenerated from the 4700VP The audio to the phone line will be enabled when six digits or less have been received and the COR goes inactive for 4 seconds, or 6 digits or greater have been received and COR goes inactive. Regeneration can be entered again when COR goes inactive, then goes active and * (Star) key is received and COR goes inactive again.

Pulse Dial
The 4700VP can be programmed for US and European pulse dial mode. The dial pulse make/break ratio may be selected for international dialing times.

Radio Interface

Pin	Function	Description
1	PTT output	Connect to the radio PTT input to control the radio transmit function
2	RX Audio	Connect to the radio discriminator or detector. Although not recommended, squelched/speaker audio can be used.
3	N/C	
4	CTCSS logic i/p	This input is normally connected to a radio or external CTCSS/DPL decoder output to provide additional system security. When installed, the 4700VP will only connect when the proper CTCSS/DPL is detected by the decoder and its output changes state. This input is user programmable for active high or active low.
5	Ground	Connect to a ground point in the radio
6	TX Audio	Connect to the microphone/audio input of the transceiver/transmitter.
7	N/C	
8	External COR	Use this pin on applications where discriminator audio is not used (squelched audio is used). This input is user programmable for active high or active low, and can also be connected to an external CTCSS/DCS decoder output.
9	Power (12vdc)	Connect to switched radio voltage. Range 10 - 15 V DC.

Available From:

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